

WHAT IS CLAIMED IS:

1. An image change detecting apparatus for detecting generation of a fade change in image information containing a plurality of field images,  
5 the image change detecting apparatus comprising:

a dispersion value detecting device for detecting each of intra-field dispersion value in each field image;

an average direct current level detecting device for detecting each of intra-field average direct current levels in each field image; and

- 10 a detecting device for detecting whether or not the fade change occurs based on a change of the detected intra-field dispersion value and a change of the detected intra-field average direct current level.

2. The image change detecting apparatus according to claim 1,  
15 wherein the detecting device detects that the fade change occurs in the plurality of the continuous field images when the detected intra-field dispersion value and the detected intra-field average direct current level change linearly altogether relevant to a plurality of the continuous field images.

- 20 3. The image change detecting apparatus according to claim 1, wherein the detecting device detects that the fade change from the field images of single white color occurs in the plurality of the continuous field images when the detected intra-field dispersion value has a  
25 positive gradient and changes linearly, and when the detected intra-field

average direct current level has a negative gradient and changes linearly,  
relevant to the plurality of the continuous field images.

4. The image change detecting apparatus according to claim 2,  
5 wherein the detecting device detects that the fade change from the field  
images of single white color occurs in the plurality of the continuous  
field images when the detected intra-field dispersion value has a  
positive gradient and changes linearly, and when the detected intra-field  
average direct current level has a negative gradient and changes linearly,  
10 relevant to the plurality of the continuous field images.

5. The image change detecting apparatus according to claim 1,  
wherein the detecting device detects that the fade change from the field  
images of single black color occurs in the plurality of the continuous  
15 field images relevant to the plurality of the continuous field images  
when the detected intra-field dispersion value and the detected  
intra-field average direct current level each have a positive gradient and  
changes linearly.

20 6. The image change detecting apparatus according to claim 2,  
wherein the detecting device detects that the fade change from the field  
images of single black color occurs in the plurality of the continuous  
field images relevant to the plurality of the continuous field images  
when the detected intra-field dispersion value and the detected  
25 intra-field average direct current level each have a positive gradient and  
changes linearly.

7. An image encoding apparatus including an image change detecting apparatus for detecting generation of a fade change in image information containing a plurality of field images,

5 the image change detecting apparatus comprising:

a dispersion value detecting device for detecting each of intra-field dispersion value in each field image;

an average direct current level detecting device for detecting each of intra-field average direct current levels in each field image; and

10 a detecting device for detecting whether or not the fade change occurs based on a change of the detected intra-field dispersion value and a change of the detected intra-field average direct current level,

the image encoding apparatus further comprising:

15 an encoding device for changing an encoding parameter in encoding of the detected subsequent image information, thereby encoding the image, when it is detected that the fade change occurs.

8. The image encoding apparatus including an image change detecting apparatus for detecting generation of a fade change in image information containing a plurality of field images according to claim 5,  
20 wherein the detecting device detects that the fade change occurs in the plurality of the continuous field images when the detected intra-field dispersion value and the detected intra-field average direct current level change linearly altogether relevant to a plurality of the continuous field  
25 images.

9. The image encoding apparatus including an image change detecting apparatus for detecting generation of a fade change in image information containing a plurality of field images according to claim 7, wherein the detecting device detects that the fade change from the field  
5 images of single white color occurs in the plurality of the continuous field images when the detected intra-field dispersion value has a positive gradient and changes linearly, and when the detected intra-field average direct current level has a negative gradient and changes linearly, relevant to the plurality of the continuous field images.

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10. The image encoding apparatus including an image change detecting apparatus for detecting generation of a fade change in image information containing a plurality of field images according to claim 8, wherein the detecting device detects that the fade change from the field  
15 images of single white color occurs in the plurality of the continuous field images when the detected intra-field dispersion value has a positive gradient and changes linearly, and when the detected intra-field average direct current level has a negative gradient and changes linearly, relevant to the plurality of the continuous field images.

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11. The image encoding apparatus including an image change detecting apparatus for detecting generation of a fade change in image information containing a plurality of field images according to claim 7, wherein the detecting device detects that the fade change from the field  
25 images of single black color occurs in the plurality of the continuous field images relevant to the plurality of the continuous field images

when the detected intra-field dispersion value and the detected intra-field average direct current level each have a positive gradient and changes linearly.

5 12. The image encoding apparatus including an image change detecting apparatus for detecting generation of a fade change in image information containing a plurality of field images according to claim 8, wherein the detecting device detects that the fade change from the field images of single black color occurs in the plurality of the continuous  
10 field images relevant to the plurality of the continuous field images when the detected intra-field dispersion value and the detected intra-field average direct current level each have a positive gradient and changes linearly.

15 13. An image change detecting method for detecting an occurrence of a fade change in image information containing a plurality of field images, the image change detecting method comprising the processes of:

20 detecting each of the intra-field dispersion values in the each field image;

detecting each of the intra-field average direct current level in each field image; and

detecting an occurrence of the fade change based on a change of the detected intra-field dispersion value and a change of the detected  
25 intra-field average direct current level.

14. The image change detecting method according to claim 13,  
wherein the process of detecting each of the intra-field dispersion values  
detects that the fade change occurs in a plurality of the continuous field  
images when the detected intra-field dispersion value and the detected  
5 intra-field average direct current level change linearly relevant to the  
plurality of the continuous field images.

15. An information recording medium in which an image change  
detecting program is readably recorded by a computer included  
10 in a image change detecting apparatus for detecting generation of  
a fade change in image information containing a plurality of field images,  
the image change detecting program causing the computer to  
function as:

a dispersion value detecting device for detecting each of the  
15 intra-field dispersion values in each field image;

an average direct current level detecting device for detecting each  
of the infra-field average direct current levels in each field image; and

a detecting device for detecting an occurrence of the fade change  
based on a change of the detected intra-field dispersion value and a  
20 change of the detected intra-field average direct current level.

16. The information recording medium according to claim 15,  
wherein the image change detecting program is readably recorded  
by the computer, the image change detecting program causing the  
25 computer to further function as:

the detecting device detects that the fade change occurs in the plurality of continuous field images when the detected intra-field dispersion value and the detected intra-field average direct current level change linearly altogether relevant to a plurality of the continuous field  
5 images.